

## REMARKS

The Examiner is thanked for the thorough examination and search of the subject.

Claims 106-110, 112-116, 119-120, 123, 126-129, 131 and 136-151 are pending, wherein Claims 106, 116 and 136-140 are currently amended, Claims 141-151 are newly added, and Claims 1-105, 111, 117, 118, 121, 122, 124, 125, 130 and 132-135 are canceled.

Response to Claim Rejections under 35 U.S.C. 102 and 103

Applicants respectfully traverse the rejections for at least the reasons set forth below.

**Response to Claims 106-110, 112-116, 119, 141 and 142**

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As currently amended, independent claim 106 is recited below:

106. A semiconductor chip or wafer comprising:  
a silicon substrate;  
a metallization structure over said silicon substrate;  
a passivation layer over said metallization structure, wherein an opening in said passivation layer exposes a first contact pad of said metallization structure, and wherein said passivation layer comprises an inorganic material;  
a polymer layer over said passivation layer, wherein said polymer layer has a thickness of between 2 and 50  $\mu\text{m}$ ; and  
a metal trace over part of said polymer layer and over said first contact pad, wherein said metal trace comprises a gold layer with a thickness of between 2 and 100  $\mu\text{m}$ , and wherein said metal trace comprises a second contact pad connected to said first contact

pad, wherein the positions of said first and second contact pads from a top perspective view are different.

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*Reconsideration of Claims 106-110, 112-116 and 119 rejected under 35 U.S.C. 102(e) as being anticipated by or under 35 U.S.C. 103(a) as being obvious over US2003/010,2551 to Kikuchi is requested based on the following remarks.*

Applicants respectfully assert that the semiconductor chip or wafer claimed in claim 106 patentably distinguishes over the citation by Kikuchi (US2003/010,2551).

Kikuchi teaches a circuit component comprising a silicon substrate 110; a metallization structure 120 over said silicon substrate 110; a passivation layer 130 over said metallization structure 120, wherein an opening in said passivation layer 130 exposes a first contact pad 120 of said metallization structure, and wherein said passivation layer 130 comprises an inorganic material; a polymer layer 140 over said passivation layer 130; and a metal trace 150 and 160 over part of said polymer layer 140 and over said first contact pad 120, wherein said metal trace 150 and 160 comprises a gold layer with a thickness of between 2 and 100  $\mu\text{m}$ , and wherein said metal trace 150 and 160 comprises a second contact pad (a portion of metal trace 150 and 160 under element 170) connected to said first contact pad 120, wherein the positions of said first contact pad 120 and said second contact pad (a portion of metal trace 150 and 160 under element 170) from a top perspective view are different. ~ See Fig. 2 and para.[0039]-[0043] ~

Kikuchi teaches said polymer layer 140 has a thickness of 1  $\mu\text{m}$ , but fails to teach said polymer layer 140 has a thickness of between 2 and 50 microns, as currently claimed in Claim 106. Withdrawal of rejection under 35 U.S.C. 102 (e) to Claim 106 is respectfully requested.

The Examiner considers that “With respect to “second contact pad is used to be wirebonded thereto” does not provide a structural limitation, but it is rather defining the second pad is capable of having or receiving a wirebonded thereto. Thus, the second pad of Kikuchi would have the same capability as claimed.” ~ *See the last paragraph on page 3, in last Office Action mailed Oct. 3, 2006* ~

Applicants respectfully traverse the Examiner’s opinion. The reason is explicitly explained as below.

The meaning of “capable of” is extremely different from the meaning of “used to”. “Pad capable of being wirebonded thereto” means “the material of the pad having a nature required to have the material of a wire bonded thereto”, which is a natural phenomenon that is not required to be invented or thought of by a human. However, the trait of “a pad used to be wirebonded thereto” is required to be invented or conceived by a human to form the combination of a pad and a wirebonding technology. The dependent claim 112 should be patentable because Kikuchi fails to teach, hint or suggest said second contact pad (a portion of metal trace 150 and 160 under element 170) used to be wirebonded thereto.

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.

Extracted from MPEP 2173.05(g)

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In the above-mentioned citation from the MPEP, a functional limitation should be evaluated and considered, just like any other limitation of the claim. Therefore, applicants consider that the functional limitation, “used to be wirebonded thereto”, should be seriously considered like some structural limitation of the claim. The Examiner has failed to establish a prima facie case of the functional anticipation that said second contact pad is used to be wirebonded thereto, as claimed in Claim 112, since Kikuchi does not teach the functional limitation that said second contact pad (a portion of metal trace 150 and 160 under element 170) can be used to be wirebonded thereto.

For at least the foregoing reasons, applicants respectfully submit independent claim 106 patently distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent claims 107-110, 112-116, 119, 141 and 142 patently define over the prior art as well.

**Response to Claims 120, 123, 126-129, 131 and 143-146**

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As previously presented, independent claim 120 is recited below:

120. A semiconductor chip or wafer comprising:

a silicon substrate;

a metallization structure over said silicon substrate;

a passivation layer over said metallization structure, wherein an opening in said passivation layer exposes a first contact pad of said metallization structure, and wherein said passivation layer comprises an inorganic material; and

a second contact pad connected to said first contact pad, wherein said second contact pad comprises a gold layer with a thickness of between 2 and 15  $\mu\text{m}$  and is used to be wirebonded thereto.

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*Reconsideration of Claims 120, 123, 126-129 and 131 rejected under 35 U.S.C. 102(e) as being anticipated by or under 35 U.S.C. 103(a) as being obvious over US2003/010,2551 to Kikuchi is requested based on the following remarks.*

Applicants respectfully assert that the semiconductor chip or wafer claimed in claim 120 patentably distinguishes over the citation by Kikuchi (US2003/010,2551).

Kikuchi teaches a circuit component comprising a silicon substrate 110; a metallization structure 120 over said silicon substrate 110; a passivation layer 130 over said metallization structure 120, wherein an opening in said passivation layer 130 exposes a first contact pad 120 of

said metallization structure, and wherein said passivation layer 130 comprises an inorganic material; and a second contact pad (a portion of metal trace 150 and 160 under element 170) connected to said first contact pad 120, wherein said second contact pad (a portion of metal trace 150 and 160 under element 170) comprises a gold layer with a thickness of between 2 and 15  $\mu\text{m}$ . ~ See Fig. 2 and para.[0039]-[0043] ~

Kikuchi teaches said second contact pad (a portion of metal trace 150 and 160 under element 170) is used to have a bump 70 formed thereon, but fails to teach said second contact pad (a portion of metal trace 150 and 160 under element 170) can be used to be wirebonded thereto, as currently claimed in Claim 120. Withdrawal of rejection under 35 U.S.C. 102 (e) to Claim 120 is respectfully requested.

The Examiner considers that “With respect to “second contact pad is used to be wirebonded thereto” does not provide a structural limitation, but it is rather defining the second pad is capable of having or receiving a wirebonded thereto. Thus, the second pad of Kikuchi would have the same capability as claimed.” ~ See the last paragraph on page 3, in last Office Action mailed Oct. 3, 2006 ~

Applicants respectfully traverse the Examiner’s opinion. The reason is explicitly explained as below.

The meaning of “capable of” is extremely different from the meaning of “used to”. “Pad capable of being wirebonded thereto” means “the material of the pad having a nature required to

have the material of a wire bonded thereto”, which is a natural phenomenon that is not required to be invented or thought of by a human. However, the trait of “a pad used to be wirebonded thereto” is required to be invented or conceived by a human to form the combination of a pad and a wirebonding technology. The independent claim 120 should be patentable because Kikuchi fails to teach, hint or suggest said second contact pad (a portion of metal trace 150 and 160 under element 170) used to be wirebonded thereto.

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A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.

Extracted from MPEP 2173.05(g)

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In the above-mentioned citation from the MPEP, a functional limitation should be evaluated and considered, just like any other limitation of the claim. Therefore, applicants consider that the functional limitation, “used to be wirebonded thereto”, should be seriously considered like some structural limitation of the claim. The Examiner has failed to establish a prima facie case of the functional anticipation that said second contact pad is used to be wirebonded thereto, as claimed in Claim 120, since Kikuchi does not teach the functional

limitation that said second contact pad (a portion of metal trace 150 and 160 under element 170) can be used to be wirebonded thereto.

For at least the foregoing reasons, applicants respectfully submit independent claim 120 patently distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent claims 123, 126-129, 131 and 143-146 patently define over the prior art as well.

#### **Response to Claims 136-140 and 147-151**

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As currently amended, independent claim 136 is recited below:

136. A circuit component comprising:  
a semiconductor substrate;  
a metallization structure over said semiconductor substrate;  
a passivation layer over said metallization structure, wherein said passivation layer comprises an inorganic material; and  
a metal trace over said passivation layer, wherein said metal trace comprises a titanium-containing layer, a first gold layer on said titanium-containing layer, and a second gold layer on said first gold layer, wherein said titanium-containing layer has a thickness of between 0.01 and 3  $\mu\text{m}$ , said first gold layer has a thickness of between 0.05 and 3  $\mu\text{m}$ , and said second gold layer has a thickness of between 2 and 100  $\mu\text{m}$ .

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*Reconsideration of Claims 136-140 rejected under 35 U.S.C. 102(e) as being anticipated by or under 35 U.S.C. 103(a) as being obvious over US2003/010,2551 to Kikuchi is requested based on the following remarks.*



Applicants respectfully assert that the circuit component claimed in claim 136 patentably distinguishes over the citation by Kikuchi (US2003/010,2551).

Kikuchi teaches a circuit component comprising a silicon substrate 110; a metallization structure 120 over said silicon substrate 110; a passivation layer 130 over said metallization structure 120, wherein said passivation layer 130 comprises an inorganic material; and a metal trace 150 and 160 over said passivation layer 130, wherein said metal trace 150 and 160 comprises a titanium-containing layer, a first gold layer on said titanium-containing layer, and a second gold layer on said first gold layer, wherein said titanium-containing layer has a thickness of between 0.01 and 3  $\mu\text{m}$ , and said second gold layer has a thickness of between 2 and 100  $\mu\text{m}$ .

*~ See Fig. 2 and para.[0039]-[0043] ~*

However, Kikuchi fails to teach, hint or suggest said first gold layer has a thickness of between 0.05 and 3  $\mu\text{m}$ . Withdrawal of rejection under 35 U.S.C. 102 (e) to Claim 120 is respectfully requested.

The Examiner considers that “With respect to “second contact pad is used to be wirebonded thereto” does not provide a structural limitation, but it is rather defining the second pad is capable of having or receiving a wirebonded thereto. Thus, the second pad of Kikuchi would have the same capability as claimed.” *~ See the last paragraph on page 3, in last Office Action mailed Oct. 3, 2006 ~*

Applicants respectfully traverse the Examiner's opinion. The reason is explicitly explained as below.

The meaning of "capable of" is extremely different from the meaning of "used to". "Pad capable of being wirebonded thereto" means "the material of the pad having a nature required to have the material of a wire bonded thereto", which is a natural phenomenon that is not required to be invented or thought of by a human. However, the trait of "a pad used to be wirebonded thereto" is required to be invented or conceived by a human to form the combination of a pad and a wirebonding technology. The dependent claim 137 should be patentable because Kikuchi fails to teach, hint or suggest said second contact pad (a portion of metal trace 150 and 160 under element 170) used to be wirebonded thereto.

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A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.

Extracted from MPEP 2173.05(g)

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In the above-mentioned citation from the MPEP, a functional limitation should be evaluated and considered, just like any other limitation of the claim. Therefore, applicants consider that the functional limitation, "used to be wirebonded thereto", should be seriously considered like some structural limitation of the claim. The Examiner has failed to establish a prima facie case of the functional anticipation that said metal trace comprises a pad used to be wirebonded thereto, as claimed in Claim 137, since Kikuchi does not teach the functional limitation that said metal trace 150 and 160 may comprise a pad used to be wirebonded thereto.

For at least the foregoing reasons, applicants respectfully submit independent claim 136 patently distinguishes over the prior art references, and should be allowed. For at least the same reasons, dependent claims 137-140 and 147-151 patently define over the prior art as well.

### CONCLUSION

Some or all of the pending claims are believed to be in condition for allowance. Accordingly, allowance of the claims and the application as a whole are respectfully requested.

It is requested that should Examiner Le not find that the Claims are now Allowable that he call the undersigned at 845 452-5863 to overcome any problems preventing allowance.

Respectfully submitted,



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